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10/565,633

06/23/2006

Guido Luigi Daghini

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05/17/2011

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1747

MAIL DATE

DELIVERY MODE

05/17/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/565,633 | DAGHINI ET AL. | |
| | Examiner | Art Unit | |
| | Justin R. Fischer | 1747 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-49,51,54-65 and 68-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-49,51,54-65 and 68-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 13, 2011 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 31-34, 38-45, 49, 54-65, and 68-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paonessa (US 5,871,602, newly cited) and further in view of Okamoto (US 5,287,691, of record).

As best depicted in Figure 8, Paonessa teaches a pneumatic tire construction including a pair of annular reinforcing elements 26, a carcass structure 41, a pair of bead fillers 2, at least one flipper 70, a tread band, a belt structure 50,51, and a pair of sidewalls, wherein each ply of said carcass structure is turned up around respective annular reinforcing elements. As to the flipper, Paonessa teaches the use of steel reinforcing elements (Column 7, Lines 40-45 and Column 16, Lines 26+). While Paonessa fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved corrosion resistance and fatigue

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resistance, as shown for example by Okamoto (Column 1, Lines 5-11). It is particularly noted that Okamoto broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Okamoto in the flipper of Paonessa. Also, the preformed filaments of Okamoto have a diameter between 0.10 mm and 0.50 mm, which substantially encompasses the claimed range (Column 5, Lines 34-36).

Lastly, regarding independent claim 31, one having ordinary skill in the art at the time of the invention would have found it obvious to form a tire with an aspect ratio of 0.45 or below given the general disclosure of Paonessa (Column 4, Lines 65+ and Column 16, Lines 53+). It is emphasized that a fair reading of Paonessa does not suggest that the tire is limited to a single aspect ratio or those above 0.45- a fair reading of Paonessa suggests a wide variety of aspect ratios in the range of 0.50 and such includes those required by the claimed invention. Also, the language "high or very high performance" requires nothing more than the aforementioned aspect ratio.

Regarding claims 32-34, 38, 43-45, and 48, the cord of Okamoto includes a pair of preformed filaments having a spiral or helical shape.

With respect to claims 39 and 40, flipper 70 comprises a pair of legs that are in direct contact with bead filler 22 and a central portion that directly contacts the annular reinforcing elements 26, wherein flipper ends are offset from one another.

Regarding claim 41, a first flipper (that which directly contacts the bead cores and bead filler) constitutes the claimed flipper and a second flipper constitutes the claimed “chafer”. One would have found it obvious to form each with the metallic reinforcing cord of Okamoto.

With respect to claims 54 and 59, one of ordinary skill in the art would have recognized the disclosed metal as being steel as is conventional in the tire industry.

Regarding claims 55 and 60, Okamoto teaches the use of brass plated metal filaments, as is conventional in the tire industry (Column 6, Lines 20+).

As to claims 56, 57, 61, and 62, Okamoto suggests the inclusion of 2 preformed filaments having the claimed preformed and stranding dimensions. Additionally, it is noted that the claims define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

Regarding claims 58 and 63, the claims define an extremely broad range of values for the cord density and said values are consistent with those conventionally used in tire components, including flippers. Additionally, applicant has not provided a

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conclusive showing of unexpected results to establish a criticality for the claimed cord density.

With respect to claims 64 and 65, each flipper 70 is formed of steel reinforcing elements inclined at about 45 degrees, which falls in the middle of the claimed range (Column 16, Lines 26+).

As to claim 69, reinforcing lay 62 can be viewed as the claimed "chafer".

Regarding claim 70, the "chafer" of Paonessa is disposed between two carcass plies in as much as Figure 4 depicts such an arrangement (see Page 26, Lines 27+ of original disclosure).

With respect to claim 72, a first flipper or innermost flipper that directly contacts the bead filler and the bead core can be viewed as the claimed "flipper" and a second flipper that is outward of said first flipper can be viewed as the claimed "chafer" between the flipper and the carcass ply.

4. Claims 31-37, 39-48, 54-65, and 69-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paonessa and further in view of Mizuma (JP 11241282, of record).

Paonessa teaches a pneumatic tire construction including a pair of annular reinforcing elements 26, a carcass structure 41, a pair of bead fillers 22, at least one flipper 70, a tread band, a belt structure 50,51, and a pair of sidewalls, wherein each ply of said carcass structure is turned up around respective annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of steel reinforcing elements (Column 7, Lines 42+ and Column 16, Lines 26+). While Paonessa fails to expressly suggest a

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cord having at least one preformed element, such a metallic cord is recognized as providing high durability, as shown for example by Mizuma (Abstract). It is particularly noted that Mizuma broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements (fair reading of reference suggests the general use of such cords in all tire components). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Mizuma in the flipper of Paonessa.

Also, Mizuma teaches a plurality of embodiments in which the steel filaments have a diameter of 0.25 mm (Table 1).

Lastly, regarding independent claim 31, one having ordinary skill in the art at the time of the invention would have found it obvious to form a tire with an aspect ratio of 0.45 or below given the general disclosure of Paonessa (Column 4, Lines 65+ and Column 16, Lines 53+). It is emphasized that a fair reading of Paonessa does not suggest that the tire is limited to a single aspect ratio or those above 0.45- a fair reading of Paonessa suggests a wide variety of aspect ratios in the range of 0.50 and such includes those required by the claimed invention. Also, the language “high or very high performance” requires nothing more than the aforementioned aspect ratio.

Regarding claims 32-37 and 43-48, the cord of Mizuma includes at least two, preformed steel filaments having a “substantially” sinusoidal form (Abstract). The

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reference further teaches that the preformed filaments have a wave pitch between 2 and 10 mm and an amplitude or wave height between 0.02 and 10 mm (Abstract).

With respect to claims 39 and 40, flipper 70 comprises a pair of legs that are in direct with bead filler 22 and a central portion that directly contacts the annular reinforcing elements 26, wherein said flipper ends are offset from one another.

With respect to claims 54 and 59, Mizuma expressly teaches the use of steel filaments.

Regarding claims 55 and 60, metal filaments are conventionally brass plated in the tire industry and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed coating.

As to claims 56, 57, 61, and 62, Mizuma suggests the inclusion of at least 2 preformed filaments having the claimed preformed and stranding dimensions (Abstract). Additionally, it is noted that the claims define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

Regarding claims 58 and 63, the claims define an extremely broad range of values for the cord density and said values are consistent with those conventionally used in tire components, including flippers. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed cord density.

With respect to claims 64 and 65, each flipper 70 is formed of steel reinforcing elements inclined at about 45 degrees, which falls in the middle of the claimed range (Column 16, Lines 26+).

As to claim 69, reinforcing lay 62 can be viewed as the claimed "chafer".

Regarding claim 70, the "chafer" of Paonessa is disposed between two carcass plies in as much as Figure 4 depicts such an arrangement (see Page 26, Lines 27+ of original disclosure).

With respect to claim 72, a first flipper or innermost flipper that directly contacts the bead filler and the bead core can be viewed as the claimed "flipper" and a second flipper that is outward of said first flipper can be viewed as the claimed "chafer" between the flipper and the carcass ply.

5. Claims 31-34, 38-45, 49, 51, 54-65, 68, and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pneumatiques (GB 1,091,507, of record) and further in view of Okamoto and Saeki (JP 2000-335209, newly cited).

Pneumatiques teaches a pneumatic tire construction including a pair of annular reinforcing elements 10, a carcass structure 13, a pair of bead fillers 11, at least one flipper 12, a tread band, a belt structure (reference character 2 in Figure 1), and a pair of sidewalls, wherein each of said carcass plies 13₁-13₃ are turned up around respective annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). While Pneumatiques fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved corrosion

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resistance and fatigue resistance, as shown for example by Okamoto (Column 1, Lines 5-11). It is particularly noted that Okamoto broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Okamoto in the flipper of Pneumatiques. Also, the preformed filaments of Okamoto have a diameter between 0.10 mm and 0.50 mm, which substantially encompasses the claimed range (Column 5, Lines 34-36).

Lastly, regarding the independent claims, Pneumatiques is broadly directed to truck tires (Page 1, Lines 40+). While the reference is silent with respect to the aspect ratio, the claimed values are consistent with those used to form truck tires, as shown for example by Saeki (Abstract). In this instance, the disclosed range of less than 0.60 fully encompasses the claimed range between 0.25 and 0.45 and applicant has not provided a conclusive showing of unexpected results to establish a criticality for said claimed range. Also, the language "high or very high performance" requires nothing more than the aforementioned aspect ratio.

Regarding claims 32-34, 38, 43-45, and 48, the cord of Miyazaki includes a pair of preformed filaments having a spiral or helical shape (Column 2, Lines 54+).

With respect to claims 39 and 40, flipper 12 comprises a pair of legs that are in direct contact with bead filler 11 and a central portion that directly contact the annular reinforcing elements 10. It is further evident from Figure 2 that flipper ends 12₁ and 12₂ are offset from one another.

Regarding claim 41, a first flipper constitutes the claimed flipper and a second flipper constitutes the claimed "chafer". One would have found it obvious to form each with the metallic reinforcing cord of Okamoto. Alternatively, layers 16 can be viewed as the claimed chafer strips.

As to claim 51, strips 16 can also be viewed as the claimed "chafer" and such strips are positioned axially external of carcass plies 13₁-13₃.

With respect to claims 54 and 59, one of ordinary skill in the art would have recognized the disclosed metal as being steel as is conventional in the tire industry.

Regarding claims 55 and 60, Okamoto teaches the use of brass plated metal filaments, as is conventional in the tire industry (Column 6, Lines 20+).

As to claims 56, 57, 61, and 62, Miyazaki suggests the inclusion of 2 preformed filaments having the claimed preformed and stranding dimensions (Column 6, Lines 20+). Additionally, it is noted that the claims define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

Regarding claims 58 and 63, the claims define an extremely broad range of values for the cord density and said values are consistent with those conventionally used in tire components, including flippers. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed cord density.

With respect to claims 64 and 65, flipper 12 and chafer 16 are formed of metallic reinforcing elements inclined between 20 and 45 degrees with respect to the equatorial plane of the tire, which falls entirely within the broad ranges of the claimed invention.

Regarding claim 70, the "chafer" of Pneumatiques is disposed between two carcass plies in as much as Figure 4 depicts such an arrangement (see Page 26, Lines 27+ of original disclosure).

With respect to claim 72, a first flipper or innermost flipper that directly contacts the bead filler and the bead core can be viewed as the claimed "flipper" and a second flipper that is outward of said first flipper can be viewed as the claimed "chafer" between the flipper and the carcass ply.

6. Claims 31-37, 39-48, 51, 54-65, and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pneumatiques and further in view of Mizuma (JP 11241282, of record) and Saeki.

Pneumatiques teaches a pneumatic tire construction including a pair of annular reinforcing elements 10, a carcass structure 13, a pair of bead fillers 11, at least one flipper 12, a tread band, a belt structure (reference character 2 in Figure 1), and a pair of sidewalls, wherein each of said carcass plies 13₁-13₃ are turned up around respective

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annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). While Pneumatiques fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing high durability, as shown for example by Mizuma (Abstract). It is particularly noted that Mizuma broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements (fair reading of reference suggests the general use of such cords in all tire components). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Mizuma in the flipper of Pneumatiques.

Also, Mizuma teaches a plurality of embodiments in which the steel filaments have a diameter of 0.25 mm (Table 1).

Lastly, regarding the independent claims, Pneumatiques is broadly directed to truck tires (Page 1, Lines 40+). While the reference is silent with respect to the aspect ratio, the claimed values are consistent with those used to form truck tires, as shown for example by Saeki (Abstract). In this instance, the disclosed range of less than 0.60 fully encompasses the claimed range between 0.25 and 0.45 and applicant has not provided a conclusive showing of unexpected results to establish a criticality for said claimed

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range. Also, the language “high or very high performance” requires nothing more than the aforementioned aspect ratio.

Regarding claims 32-37 and 43-48, the cord of Mizuma includes at least two, preformed steel filaments having a “substantially” sinusoidal form (Abstract). The reference further teaches that the preformed filaments have a wave pitch between 2 and 10 mm and an amplitude or wave height between 0.02 and 10 mm (Abstract).

With respect to claims 39 and 40, flipper 12 comprises a pair of legs that are in direct with bead filler 11 and a central portion that directly contact the annular reinforcing elements 10. It is further evident from Figure 2 that flipper ends 12₁ and 12₂ are offset from one another.

As to claim 51, strips 16 can also be viewed as the claimed “chafer” and such strips are positioned axially external of carcass plies 13₁-13₃.

With respect to claims 54 and 59, Mizuma expressly teaches the use of steel filaments.

Regarding claims 55 and 60, metal filaments are conventionally brass plated in the tire industry and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed coating.

As to claims 56, 57, 61, and 62, Mizuma suggests the inclusion of at least 2 preformed filaments having the claimed preformed and stranding dimensions (Abstract). Additionally, it is noted that the claims define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have

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found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

Regarding claims 58 and 63, the claims define an extremely broad range of values for the cord density and said values are consistent with those conventionally used in tire components, including flippers. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed cord density.

With respect to claims 64 and 65, flipper 12 and chafer 16 are formed of metallic reinforcing elements inclined between 20 and 45 degrees with respect to the equatorial plane of the tire, which falls entirely within the broad ranges of the claimed invention.

Regarding claim 70, the "chafer" of Pneumatiques is disposed between two carcass plies in as much as Figure 4 depicts such an arrangement (see Page 26, Lines 27+ of original disclosure).

With respect to claim 72, a first flipper or innermost flipper that directly contacts the bead filler and the bead core can be viewed as the claimed "flipper" and a second flipper that is outward of said first flipper can be viewed as the claimed "chafer" between the flipper and the carcass ply.

Response to Arguments

7. Applicant's arguments with respect to claims 31-49, 51, 54-65, and 68-72 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer
/Justin R Fischer/
Primary Examiner, Art Unit 1747
May 16, 2011